

Claims

1. A method of diagnosing a cardiovascular condition characterized by aberrant expression of a nucleic acid molecule or an expression product thereof, said method comprising:

5 a) contacting a biological sample from a subject with an agent, wherein said agent specifically binds to said nucleic acid molecule, an expression product thereof, or a fragment of an expression product thereof; and

b) measuring the amount of bound agent and determining therefrom if the expression of said nucleic acid molecule or of an expression product thereof is aberrant,
10 aberrant expression being diagnostic of the condition;

wherein the nucleic acid molecule is at least one nucleic acid molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1.

2. The method of claim 1, wherein the nucleic acid molecule is at least two nucleic acid
15 molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

3. The method of claim 1, wherein the nucleic acid molecule is at least three nucleic acid
20 molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

4. The method of claim 1, wherein the nucleic acid molecule is at least four nucleic acid
25 molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

5. The method of claim 1, wherein the nucleic acid molecule is at least five nucleic acid
molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1,
AA892598, and Mrg-1.

30 6. The method of claim 1, wherein the condition is a cardiovascular condition selected from the group consisting of myocardial infarction, stroke, arteriosclerosis, and heart failure.

7. The method of claim 1, wherein the condition is cardiac hypertrophy.

8. A method for determining the stage of a cardiovascular condition in a subject characterized by aberrant expression of a nucleic acid molecule or an expression product thereof, comprising:

monitoring a sample from a patient, for a parameter selected from the group consisting of

- (i) a nucleic acid molecule selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1,
- (ii) a polypeptide encoded by the nucleic acid,
- (iii) a peptide derived from the polypeptide, and
- (iv) an antibody which selectively binds the polypeptide or peptide,

as a determination of the stage of said vascular condition in the subject.

9. The method of claim 8, wherein the sample is a biological fluid or a tissue.

10. The method of claim 8, wherein the step of monitoring comprises contacting the sample with a detectable agent selected from the group consisting of:

- (a) an isolated nucleic acid molecule which selectively hybridizes under stringent conditions to the nucleic acid molecule of (i),
- (b) an antibody which selectively binds the polypeptide of (ii), or the peptide of (iii), and
- (c) a polypeptide or peptide which binds the antibody of (iv).

11. The method of claim 10, wherein the antibody, the polypeptide, the peptide or the nucleic acid is labeled with a radioactive label or an enzyme.

12. The method of claim 10, comprising assaying the sample for the peptide.

13. A kit, comprising a package containing:

an agent that selectively binds to an isolated nucleic acid molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1, or an expression product thereof, and

a control for comparing to a measured value of binding of said agent to said isolated nucleic acid or expression product thereof.

14. The kit of claim 13, wherein the control has a predetermined value for comparing to the measured value.

15. The kit of claim 13, wherein the control comprises an epitope of the expression product of an isolated nucleic acid molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1.

16. A method for treating a cardiovascular condition, comprising:
administering to a subject in need of such treatment an agent that modulates expression of a molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1, in an amount effective to treat the cardiovascular condition.

17. The method of claim 16, further comprising co-administering an agent selected from the group consisting of an anti-inflammatory agent, an anti-thrombotic agent, an anti-platelet agent, a fibrinolytic agent, a lipid reducing agent, a direct thrombin inhibitor, a glycoprotein IIb/IIIa receptor inhibitor, an agent that binds to cellular adhesion molecules and inhibits the ability of white blood cells to attach to such molecules, a calcium channel blocker, a beta-adrenergic receptor blocker, a cyclooxygenase-2 inhibitor, and an angiotensin system inhibitor.

18. The method of claim 16, wherein the cardiovascular condition is selected from the group consisting of cardiac hypertrophy, myocardial infarction, stroke, arteriosclerosis, and heart failure.

19. A method for treating a subject to reduce the risk of a cardiovascular condition developing in the subject, comprising:

administering to a subject that expresses decreased levels of a molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1, an agent for reducing

the risk of the cardiovascular disorder in an amount effective to lower the risk of the subject developing a future cardiovascular disorder,

wherein the agent is an anti-inflammatory agent, an anti-thrombotic agent, an anti-platelet agent, a fibrinolytic agent, a lipid reducing agent, a direct thrombin inhibitor, a glycoprotein IIb/IIIa receptor inhibitor, an agent that binds to cellular adhesion molecules and inhibits the ability of white blood cells to attach to such molecules, a calcium channel blocker, a beta-adrenergic receptor blocker, a cyclooxygenase-2 inhibitor, or an angiotensin system inhibitor, or an agent that modulates expression of a molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1.

20. A method for identifying a candidate agent useful in the treatment of a cardiovascular condition, comprising:

determining expression of a set of nucleic acid molecules in a cardiac cell or tissue under conditions which, in the absence of a candidate agent, permit a first amount of expression of the set of nucleic acid molecules, wherein the set of nucleic acid molecules comprises at least one nucleic acid molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1,

contacting the cardiac cell or tissue with the candidate agent, and

detecting a test amount of expression of the set of nucleic acid molecules, wherein an increase in the test amount of expression in the presence of the candidate agent relative to the first amount of expression indicates that the candidate agent is useful in the treatment of the cardiovascular condition.

21. The method of claim 20, wherein the cardiovascular condition is selected from the group consisting of cardiac hypertrophy, myocardial infarction, stroke, arteriosclerosis, and heart failure.

22. The method of claim 20, wherein the set of nucleic acid molecules comprises at least two nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

23. The method of claim 20, wherein the set of nucleic acid molecules comprises at least three nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

24. The method of claim 20, wherein the set of nucleic acid molecules comprises at least four nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

25. The method of claim 20, wherein the set of nucleic acid molecules comprises at least five nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

26. A pharmaceutical composition, comprising:
an agent comprising an isolated nucleic acid molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1, or an expression product thereof, in a pharmaceutically effective amount to treat a cardiovascular condition, and
a pharmaceutically acceptable carrier.

27. The pharmaceutical composition of claim 26, wherein the agent is an expression product of the isolated nucleic acid molecule selected from the group consisting of Fit-1, CD44, Lot-1, AA892598, and Mrg-1.

28. The pharmaceutical composition of claim 26, wherein the cardiovascular condition is selected from the group consisting of cardiac hypertrophy, myocardial infarction, stroke, arteriosclerosis, and heart failure.

29. A solid-phase nucleic acid molecule array consisting essentially of a set of at least two nucleic acid molecules, expression products thereof, or fragments thereof, are fixed to a solid substrate, wherein each nucleic acid molecule is selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

30. The solid-phase nucleic acid molecule array of claim 29, further comprising at least one control nucleic acid molecule.

31. The solid-phase nucleic acid molecule array of claim 29, wherein the set of nucleic acid molecules comprises at least three nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

5 32. The solid-phase nucleic acid molecule array of claim 29, wherein the set of nucleic acid molecules comprises at least four nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

10 33. The solid-phase nucleic acid molecule array of claim 29, wherein the set of nucleic acid molecules comprises at least 5 nucleic acid molecules, each selected from the group consisting of Fit-1, vacuolar ATPase, CD44, Lot-1, AA892598, and Mrg-1.

15 34. The solid-phase nucleic acid molecule array of claim 29, wherein the solid substrate comprises a material selected from the group consisting of glass, silica, aluminosilicates, borosilicates, metal oxides, clays, nitrocellulose, or nylon.

35. The solid-phase nucleic acid molecule array of claim 29, wherein the solid substrate is glass.

20 36. The solid-phase nucleic acid molecule array of claim 29, wherein each of the nucleic acid molecules are fixed to the solid substrate by covalent bonding.